

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appln. No: 10/656,392
Applicant: Trebor Heminway et al.
Filed: 09/05/2003
Title: SOLDER PREFORM FOR LOW HEAT STRESS LASER SOLDER
ATTACHMENT
TC/A.U.: 1725
Examiner: Rachel E Beveridge
Confirmation No.: 9588
Notice of Appeal Filed: 02/13/2007
Docket No.: MKPA-107US

REPLY BRIEF UNDER 37 C.F.R. § 41.37

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S I R :

This is a Reply Brief to the Examiner's Answer, dated July 6, 2007.
Appellants respectfully submit the following rebuttal to the Examiner's Response to
Argument.

STATUS OF CLAIMS

Claims 1-15 are pending in this application. Of the pending claims, claims 9-15 have been withdrawn. Claims 1-7 stand rejected. Claim 8 is objected to as dependent upon rejected base claim 1. Claims 1-7 are appealed. Of those claims currently under appeal, claim 1 is independent.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-6 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,984,866 to Boisgontier et al. (Boisgontier). Claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Boisgontier and further in view of U.S. Patent No. 4,702,547 to Enochs. Claim 8 stands objected to as dependent upon rejected base claim 1.

ARGUMENT

In the Examiner's Answer, grounds for rejection under 35 U.S.C. §102(b) as being anticipated by Boisgontier have been raised for claims 1-6 and separate grounds for rejection under 35 U.S.C. §103(a) as being unpatentable over Boisgontier and further in view Enochs have been raised for claim 7. These grounds for rejection are copied verbatim from the Office Action dated December 21, 2006. In her Answer, the Examiner also raises new grounds for rejection under 35 U.S.C. §102(b).

In the materials that follow, Appellants address each of the Examiner's statements by reference to the subject patent application, the prior art references and legal standards.

In her Answer, the Examiner states that "Appellant's specification broadly discloses an 'exemplary embodiment' of Figure 2 illustrated in Figures 3A-D." The Examiner further states, on p. 5 of the Examiner's Answer, that "Appellant has merely disclosed that only one embodiment of the invention, and not every embodiment encompassed by the claimed invention, is defined by the specific definitions discussed in paragraph 30 (i.e. 'solder preform 200 with body 201 having a height H, groove height GH, width W, groove width GW, and length L')." Furthermore, on p. 6 of the Examiner's Answer, the Examiner states that the "Appellant has made no disclosure or even suggestion that the embodiment of Figure 3C (as argued) is the only embodiment encompassed by the invention, therefore suggesting that there are indeed other 'exemplary' embodiments of the invention not explicitly disclosed within the written specification." The Examiner, therefore, states that the:

"'exemplary embodiment' of Figure 3C which Appellant continually argues provides a clear definition of 'height' and 'width' are not read into the claims as they do not particularly pertain to the invention as a whole and do not define the 'height' and 'width' for every embodiment encompassed by the broadest reasonable interpretation of the invention." (Examiner's Answer, p. 7)

The Examiner, thus, "maintains the position that 'height' and 'width' can be reasonably and broadly interpreted as illustrated by the examiner and argued by the Appellant on Appeal Brief page 5."

The Examiner misconstrues the broadest reasonable interpretation which may be given to a claim. It is well settled that a claim limitation must be given its broadest reasonable interpretation consistent with the definition in the subject specification.

The Federal Circuit's en banc decision in *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the "broadest reasonable interpretation" standard:

The Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364[, 70 USPQ2d 1827] (Fed. Cir. 2004). Indeed, the rules of the PTO require that application claims must "conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description." 37 CFR 1.75(d)(1). (MPEP §2111)

Here, the Examiner has adopted an interpretation that the explicit definition of "height" and "width" provided in FIG. 3C and paragraph [0032] of the subject specification are only one embodiment which may be completely ignored. The Examiner's arguments as to why the explicit definition of height and width may be ignored proves too much. By the Examiner's reasoning, the limitations of height and width may be interpreted in a lexicographic vacuum according to the Examiner's own arbitrary interpretation.

In addition, the Examiner's interpretation that any arbitrary definition of height and width may be used is contrary to the proper standards. It is well settled that:

If extrinsic reference sources, such as dictionaries, evidence more than one definition for the term, the intrinsic record must be consulted to identify which of the different possible definitions is most consistent with applicant's use of the terms. *Brookhill-Wilk 1*, 334 F. 3d at 1300, 67 USPQ2d at 1137; see also *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250, 48 USPQ2d 1117, 1122 (Fed. Cir. 1998) ("Where there are several common meanings for a claim term, the patent disclosure serves to point away from the improper meanings and toward the proper meanings.") (MPEP §2111.01).

Accordingly, the intrinsic record must be consulted when there are different possible definitions of a term to identify definitions most consistent with the applicant's use of the terms. The Examiner, however, ignores the Appellant's use of height and width. Accordingly, the Examiner's definition of height and width is inconsistent with Appellant's use of the terms.

Furthermore, the Examiner's interpretation of height is contrary to the definition of height disclosed in Boisgontier. At Col. 10, lines 45-54, Boisgontier describes a front wall (40c) "provided with a horizontal feedthrough tube (42) extending up a fraction of its height" (see Figs. 5 and 6). Based on the height as defined in Boisgontier, a skilled person would understand that a height of the groove in the bridge strip of solder (70) corresponds to a distance from the keying area (64) to the top of the bridge strip of solder (70) (see Fig. 8). Boisgontier provides clear evidence on how the skilled person would interpret height and width. Accordingly, the Examiner's interpretation of height and width is also inconsistent with the definition provided in Boisgontier.

Finally, the Examiner's interpretation that dimensions of "height" and "width" may be read from Fig. 8 of Boisgontier is contrary to the proper standard of interpreting proportions of features in drawings. It is well settled that "proportions of features in a drawing are not evidence of actual proportions when drawings are not to scale." (MPEP §2126). See also *Nystrom v. TREX Co.*, 424 F.3d 1136, 76 USPQ2d 1481 (Fed. Cir. 2005), *cert. denied*, 126 S. Ct. 1654 (2006), where the Federal Circuit held that anticipation cannot be based on drawings not explicitly made to scale. Because Boisgontier is silent on the dimensions shown in Fig. 8 and is also silent on the drawings being to scale, dimensions of "height" and "width" shown in Fig. 8 may not be relied upon. Accordingly, Boisgontier does not disclose or suggest that a ratio of a height dimension to a width dimension is about 1.1:1 to about 1.9:1, as recited in claim 1. Boisgontier, thus, does not include all of the features of claim 1.

Accordingly, by failing to properly define the terms height and width in light of the subject specification, the Examiner fails to properly interpret the claim limitations. If the proper definition of "height" and "width" were used, and the proportions of height and width shown in Fig. 8 are discounted, Boisgontier would

not include all of the limitations of claim 1 (acknowledged by the Examiner on p. 4 of the fourth, final Office Action of August 30, 2006) and applying an anticipation rejection to the remaining limitations is improper. See *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d, 2 U.S.P.Q.2d 1051; MPEP §2131.

With respect to claim 7, Enochs does not supply the deficiencies of Boisgontier because it does not disclose or suggest that a groove of a silicon retaining member has a ratio of a height dimension to a width dimension of about 1.1:1 to about 1.9:1, as required by claim 1. In contrast, Enochs discloses that an optical fiber is positioned within a groove of a silicon retaining member and that "for an optical fiber which is about 125 microns in diameter, it is preferred that the groove be approximately 125 microns wide and 125 microns deep" (Col., 3, lines 56-59). Enochs is silent on providing a height of the groove that is greater than its width. Because neither Boisgontier, Enochs nor their combination disclose or suggest all of the limitations of claim 1, Boisgontier and Enochs are inadequate as a basis for the Examiner's obviousness rejection of claim 7.

In addition, at p. 5 of the Examiner's Answer, the Examiner states that "the mere definition of each dimension via the illustration of Figure 3C does not necessarily include positional information as to sufficiently limit the height and width to only that as defined by conventional definitions" and further that "[i]n other words, the position of the solder preform for bonding purposes... is not disclosed... in order to justify the Appellant's arguments." This is neither true nor relevant. Appellants clearly show in Figs. 3C and 3D and describe in paragraph [0032] of the subject specification dimensions of the groove, dimensions of the solder preform and positioning of the solder preform with respect to an optical fiber. Based on the disclosure in the subject specification, the skilled person would understand how to position the solder preform over an optical fiber. As discussed above, the intrinsic record must be consulted to identify which of the possible definitions is most consistent with the Appellants' use of the terms.

On p. 5 of the Examiner's Answer, the Examiner also states that "[i]t is unclear from the Appellant's disclosure and claimed limitations ... the relationships between the discussed dimensions and the orientation of the solder preform." As discussed above, this is neither true nor relevant. The Examiner further states that

"[t]he solder preform is interpreted to encompass many different orientations in space, and conventional definitions of height and width as argued by the appellant would not necessarily encompass the particular embodiment shown in Figure 3C." As discussed above, the intrinsic record must be consulted to identify which of the possible definitions is most consistent with the Appellants' use of the terms. Accordingly, the claims are not to be read in a vacuum. According to the proper standard, the definitions of "height" and "width" provided in the subject disclosure should be read into the claims to be consistent with Appellants use of the terms.

Furthermore, the Examiner states that "Appellant does not explicitly claim that the 'height of the groove is greater than its width'" and that the "mere limitation of 'about' leads one of ordinary skill in the art to a reasonable interpretation broadly encompassing a range of values on either side of the claimed ratio." (Examiner's Answer p. 9.) The Examiner, thus, states that "it is not necessarily implied or even suggested by the claim limitation ... that the ratio of height to width must absolutely have a greater height of the groove than the groove width" and that the Examiner can "interpret 'about 1.1:1 to be 1:1."

Here, the Examiner implies that the limitation "about 1.1:1 to about 1.9:1" is indefinite and that it may be interpreted to encompass a height of the groove equal to its width. It is well established that:

The fact that claim language, including terms of degree, may not be precise, does not automatically render the claim indefinite under 35 U.S.C. 112, second paragraph. *Seattle Box Co., v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 221 USPQ 568 (Fed. Cir. 1984). Acceptability of the claim language depends on whether one of ordinary skill in the art would understand what is claimed, in light of the specification. (MPEP §2173.05(b))

Appellants also note that the term "about" is not an arbitrary term, but rather a flexible word with a meaning similar to "approximately" or "nearly." See *Ex parte Eastwood*, 163 USPQ 316, 317 (Bd. App. 1968). Furthermore, "[t]he meaning of the word 'about' is dependent on the facts of a case, the nature of the invention, and the knowledge imparted by the totality of the earlier disclosure to those skilled in the art." See *Eiselstein v. Frank*, 52 F.3d 1035, 34 USPQ2d 1467, 1471 (Fed. Cir. 1995).

See also *Davis v. Palmer*, 7 F. Cas. 154, 157-58 (C.C.D. Va. 1827) (No. 3,645). Figs. 3C, 3D and paragraph [0032] of the subject specification clearly describe dimensions of the groove, dimensions of the solder preform and positioning of the solder preform with respect to an optical fiber. Furthermore, paragraph [0032] specifically describe advantages of having the specific disclosed groove height and groove width dimensions for aligning an optical fiber. Accordingly, based on the subject specification, the skilled person would *not* interpret "about 1.1:1" to include "1:1," i.e. a groove height equal to a groove width.

Furthermore, the Examiner states that "regardless of the height and width of the groove in Boisgontier et al., the disclosed invention clearly anticipates the same result achieved by the appellant's claim." (Examiner's Answer p. 10). Here, the Examiner appears to ignore the claimed limitation of a ratio of a height dimension to a width dimension is about 1.1:1 to about 1.9:1. The Examiner, instead adopts an interpretation that Boisgontier teaches all of the other limitations of the claim and thus anticipates the claim. However, as discussed above, when all of the claimed limitations are included, Boisgontier would not include all of the limitations of claim 1 (acknowledged by the Examiner on p. 4 of the fourth, final Office Action of August 30, 2006). Accordingly, applying an anticipation rejection to the remaining limitations is improper. See *Verdegaal Bros. v. Union Oil. Co. of California*, 814 F.2d, 2 U.S.P.Q.2d 1051; MPEP §2131.

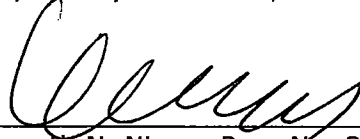
Finally, the Examiner states that "the Applicant has provided no unexpected results or evidence proving that the resultant structure would be significantly different than that of Boisgontier et al. due to the claimed differences in groove height to width ratio." (Examiner's Answer p. 10). The Examiner is incorrect that there are no differences between the solder preform of the subject invention and the solder preform of Boisgontier et al. The differences and advantages of the solder preform of the subject invention were described on page 3 of the Appeal Brief. In particular, the Appeal Brief described that the alignment of the optical fiber to an emitting device in the vertical direction is typically more critical than its alignment in the horizontal direction. Because the height of the groove is greater than its width, the solder preform allows for greater flexibility in aligning the optical fiber in the vertical direction. As discussed above, because Boisgontier is silent regarding the dimensions of the solder preform, Fig. 8 of Boisgontier is not evidence of actual

proportions of the solder preform. Because Boisgontier is silent regarding the dimensions of the solder preform, Boisgontier cannot teach that a height of a groove is greater than its width and, thus, cannot provide the advantages of the solder preform of the subject invention.

CONCLUSION

Appellant has advanced reasons demonstrating that the disclosure of Boisgontier is insufficient as a basis for an anticipation rejection of the pending claims and that the disclosure of Enochs combined with the disclosure of Boisgontier is insufficient as a basis for an obviousness rejection of the pending claim. Accordingly, Appellants respectfully request the Board's reversal of these rejections.

Respectfully submitted,



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Dated: September 6, 2007